



*...The Newsletter of The PCOS Society, India*

- ▣ Welcoming Our New Members  
Page 02
- ▣ Editorial: Dr Duru Shah  
Page 03
- ▣ Vijayeta – Our Public Awareness Campaign  
Page 04
- ▣ Scientific Article:  
Visceral obesity and NAFLD in  
PCOS: Professor Ronald C.W. Ma,  
Dr Noel Y.H. Ng  
Page 05
- ▣ Points of View: How is PCOS Connected to  
the Leaky Gut?  
Page 09
- ▣ Hot off the Press: Dr Nagadeepti Naik,  
Dr Zeel Shah  
Page 11
- ▣ Events Held:  
▣ 8th Annual Conference  
Page 06-08  
▣ Updates: Challenges, Consequences  
and Control of PCOS  
▣ PCOS Science Live  
Page 10

Registered Address:  
406, 4th floor, B - Wing, Trade World, Kamala Mills Compound, Lower Parel, Mumbai - 400013

Phone: 022 49677604

Email: [thepcossociety@gmail.com](mailto:thepcossociety@gmail.com) | Website: [www.pcosindia.org](http://www.pcosindia.org)



## Welcoming....

### Our New Patrons



**Dr. Archana Bajaj**  
Gynaecologist



**Dr. Suchira Majumdar**  
Gynaecologist



**Dr. Isha Sudrania**  
Gynaecologist



**Dr. Chandra**  
Gynaecologist

### Our New Associate Members

Ms. Asiya Ali	Nutritionist
Ms. Dhvani Sonde	Nutritionist
Ms. Chandan Manroa	Nutritionist
Ms. Simran Bhasin	Nutritionist
Ms. Lavanya S	Physiotherapist

### Our New Life Members

Dr. Nagarathnam	Gynaecologist	Dr. Viqat Ara	Gynaecologist	Dr. Latha K	Gynaecologist
Dr. Kaustubh Dighambhar Kulkarni	Gynaecologist	Dr. Vasudha C S	Gynaecologist	Dr. Indrani CE	Gynaecologist
Dr. S Sreekumar	Gynaecologist	Dr. Usha	Gynaecologist	Dr. Chita Reddy	Gynaecologist
Dr. Neeta Dhabhai	Gynaecologist	Dr. Suma Karanth	Gynaecologist	Dr. Chetana N Aradhya	Gynaecologist
Dr. Sushma Bhutada	Gynaecologist	Dr. Sukanya Mk	Gynaecologist	Dr. Chaitanya Indrani	Gynaecologist
Dr. Monica Saha	Gynaecologist	Dr. Sowmya P	Gynaecologist	Dr. Asha Hiremath	Gynaecologist
Dr. Ruchi Mehta	Gynaecologist	Dr. Sowmya DS	Gynaecologist	Dr. Aruna	Gynaecologist
Dr. Neetu Rastogi	Gynaecologist	Dr. Sahana KP	Gynaecologist	Dr. Aparna	Gynaecologist
Dr. Tuhina Mital	Gynaecologist	Dr. Ruthnani	Gynaecologist	Dr. Ambika V	Gynaecologist
Dr. Divya Venugopalan	Gynaecologist	Dr. Nusrat	Gynaecologist	Dr. Achi R K	Gynaecologist
				Dr. Sirisha Shankara	Gynaecologist

## Inviting our Readers to become MEMBERS OF THE PCOS SOCIETY!



### Benefits of being a Member:

- Reduced registration fees for all academic activities.
- Get a Certificate for Courses on our website.
- Opportunity to win fabulous prizes at the Live Quiz to be held in September 2023.
- Free access to all the recorded webinars and latest conference lectures.
- Opportunity to participate as a faculty at the Annual Conference.
- Opportunity to contribute to the Newsletter of the Society.
- Opportunity to become a member of the Managing Committee of the Society.
- Opportunity to connect with International and National Speakers at the Conferences organized by the Society.

To become a member, visit on the link below

<https://pcosindia.org/Membership.php>

# PCOS QUIZZES 2023

...Is Here!!

Get ready for this exciting new Season 2023

Win the title of **CHAMPION!**

Do not miss out on the chance to win fabulous prizes!

### PRIZES



Terms and Conditions

Visit website: [www.pcosindia.org](http://www.pcosindia.org)

For queries contact:

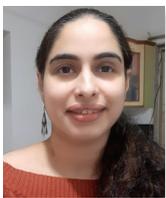
Tel. no: +91 9833225280 Email: [thepcosociety@gmail.com](mailto:thepcosociety@gmail.com)

## Editorial



**Dr Riddhi Desai**

Co editor, Pandora  
West zone coordinator, FOGSI Endoscopy committee  
Managing committee member, MOGS  
Youth Brigade member, The PCOS Society of India



**Dr Zoish Patel**

Coordinating Editor

### Executive Committee

Dr. Duru Shah  
Dr. Shashank R Joshi  
Dr. Piya Ballani Thakkar  
Dr. Madhuri Patil  
Dr. Uday Thanawala  
Dr. Sandhya Saharan

### Managing Committee

Dr. Gulrez Tyebkhan  
Dr. Kanthi Bansal  
Dr. Lipika M  
Dr. Padma Rekha Jirge  
Dr. Payal Bhargava  
Ms. Ruby Sound  
Dr. Sabahat Rasool  
Dr. Sarita Bhalerao  
Dr. Shobhana Patted  
Dr. Sudhaa Sharma  
Dr. Sujata Kar

Email: [manager.thepcossociety@gmail.com](mailto:manager.thepcossociety@gmail.com)

[www.pcosindia.org](http://www.pcosindia.org)

**Disclaimer** – Published by the The PCOS SOCIETY (INDIA). Contributions to the editor are assumed intended for this publication and are subject to editorial review and acceptance. PANDORA is not responsible for articles submitted by any contributor. These contributions are presented for review and comment and not as a statement on the standard of care. All advertising material is expected to conform to ethical medical standards, acceptance does not imply endorsement by PANDORA. Registered as Trust under section 12AA(1)(b)(i) of the Income Tax Act Registered under section 80G to accept Donation Registered Under Goods and Service Tax Act

This issue has been designed by P. Vel Kumar



**Dr. Duru Shah**

MD, FRCOG, FCPS, FICS, FICOG, FICMCH, DGO, DFP  
Director, Gynaecworld  
The Center for Women's Health & Fertility, Mumbai  
Founder President, The PCOS Society, India  
Chief Editor, Pandora

Dear Friends,

Welcome to the 2<sup>nd</sup> issue of Volume 8 of the Pandora Series, which also happens to be the 23<sup>rd</sup> Issue of our Newsletter from the PCOS Society of India!

This issue of the Pandora brings to you the news of the most exciting activities of the Society from April 2023 to June 2023. We have shared the links to our educational activities, current updates on various important areas of ongoing work in PCOS and some other interesting activities like **PCOS Quizzes**.

I thank all those who have assisted me in creating this very well received Newsletter, especially our Corporate Sponsors Torrent and Sun Pharma who have always believed in us and supported!

We have just completed a brilliant **8th Annual Conference** in collaboration with the Regional Conference of ASPIRE Conference, ISAR and KISAR, in Bengaluru in June 2023. The details of the Meeting are enclosed on pages 6 and 7. I must appreciate our entire Organizing Team led by Dr. Madhuri Patil in their excellent support to make this Meeting an event which brought together an excellent academic program, which was delivered with precision and great discussions, warm fellowship, new friendships and excellent hospitality. What more do you need from a Conference?

Another activity we are really delighted with is our Social Project called **"Vijayeta"**, a public awareness initiative which we have conceived in February 2023 in collaboration with Philips. Many of our members have participated in both Virtual & Physical Outreach programs. Please read the summary of 4 months of work done between March & June 2023 on Page 4. We invite **volunteers** from the PCOS Society Members to participate in this very much needed activity which is being carried on through the entire country in phases.

The other exciting event during this Quarter was the Inauguration of our first ever office of the PCOS Society of India, which was originally functioning from my office for 8 years, since the inception of the Organization. We had a small physical Inauguration during the first Managing Committee Meeting held on its premises and here is the link to the Inaugural Video. Please have a look at it; it will take only 2 minutes of your time! [bit.ly/46Nzf8P](https://bit.ly/46Nzf8P)

We have forged ahead through various CMEs, Webinars, Masterclasses, Conferences, Quizzes over the last 8 years taking the latest International Recommendations & Guidelines on PCOS to the entire country. A proud moment for the PCOS Society of India, we had been part of the making of the 2018 Guidelines and were invited again to collaborate for the 2023 Guidelines! We now look forward to hosting the **"PCOS Quizzes Finale"** in September, 2023 during the Collaboration of the "International PCOS Month" during which we have planned many activities. Do lookout for all our Notifications regarding our forthcoming events!

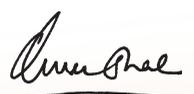
I am personally excited about the path our Organization has made in the field of Women's health!



Having been invited as an expert on the C-20 (Civic arm of G-20) Women's Health Vertical, I am now in the process of making a change for women with PCOS in India!

My heartfelt thanks to all those who have contributed towards all our activities: Our Members, our Corporate Sponsors, our collaborating Organizations and our Staff, I truly appreciate all your support.

Happy Reading!



**Dr. Duru Shah**

Chief Editor, Pandora

Founder President, The PCOS Society

## Our New PCOS Office



View the inauguration video on [bit.ly/46Nzf8P](https://bit.ly/46Nzf8P)

## Vijeyata ..... the winner



**Project Lead**  
Dr. Duru Shah



**Convenor**  
Dr. Shobhana Patil



**Convenor**  
Ms Ruby Sound



**Project Coordinator**  
Vinita Mulchandani



**Project Accountant**  
Sneha Choksi

Chairs of our Special Interest Group on Public Awareness, Dr. Ruby Sound and Dr. Shobhana Patted who have been the Convenors of this program. And of course all kudos to our back office team Ms. Vinita Mulchandani, our project coordinator and Ms. Sheha Choksi our Project Accountant for their seamless coordination

**If you would like to volunteer for Vijeyata and you are a PCOS Society member please connect with Ms. Vinita Mulchandani at +91 9152330344, or email her on [manager.vijayeta.pcos@gmail.com](mailto:manager.vijayeta.pcos@gmail.com)**

Our first organized Community Service Project named **“Vijeyata ..... the Winner”** was launched on **1st Feb 2023** in collaboration with **Phillips**. For the last 8 years we have reached out to various Medical Organizations to update physicians on the current concepts in PCOS. It was time for us to now reach out to the women in India and to help them understand what exactly is PCOS and how to manage it. We have been reaching out to women through our social media channels. But these programs are different! We physically are present in various Corporates, Clubs, NGOs speaking to women face to face, through Hybrid Webinars, and even through webinars when physical sessions are not possible.

Over the last 4 months from March '23 to June '23, we have done a total of **14 webinars 12 physical sessions**.

My personal thanks to Philips whose support has helped us with the making of the program and to all the members of the PCOS Society who have been the experts for the knowledge section. A big thank you to the



**19th April-Dr Priyanka Vora at Rotary Club of ADV, Balasahebb Apte College of Law, Dadar**



**Dr Duru Shah talking on PCOS & Infertility**



**10th May-Dr Anjali Munge at Rotary Club of DYPEIC, Pune**

## Visceral obesity and NAFLD in PCOS



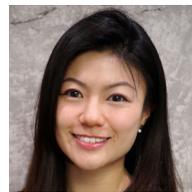
### Professor Ronald C.W. Ma

- MA, FRCP, FHKCP, FHKAM
- Professor and Head of Division of Endocrinology and Diabetes (Academic Affairs),
- Department of Medicine and Therapeutics, The Chinese University of Hong Kong.

Polycystic ovarian syndrome (PCOS) is characterized by hyperandrogenism (HA), chronic anovulation and/or polycystic ovary morphology through ovarian ultrasonography (1, 2). It is also well established that PCOS is associated with increased risk of various metabolic perturbations, such as insulin resistance (IR), type 2 diabetes mellitus (T2DM), metabolic syndrome, visceral adiposity and dyslipidaemia (3).

Non-alcoholic fatty liver disease (NAFLD) consists of a number of pathologic conditions ranging from steatosis, which is characterized by lipid accumulation in the liver parenchyma, to non-alcoholic steatohepatitis (NASH), which is characterized by chronic inflammation and fibrosis. **Growing evidence from research studies and meta-analyses suggests a high prevalence of NAFLD in women with PCOS ranging from 34% to 70%, compared with 14–34% in the general female population** (4–6). A recent meta-analysis which included 23 studies, with a total of 7148 participants, reported that women with PCOS had a 2.5-fold increased risk of NAFLD compared to controls (pooled OR 2.49, 95% confidence interval [CI] 2.20-2.82) (7). Women with PCOS had larger waist circumference, lipid accumulation product (LAP; a noninvasive index, combining waist circumference and fasting triglyceride, which reflects both the anatomical and physiological changes associated with lipid overaccumulation), IR, total cholesterol, and triglycerides compared with controls. Further analysis suggested IR and LAP were independently associated with NAFLD (6). Obesity and IR seem to be the attributable pathogenetic factors of PCOS and NAFLD (8). In women with PCOS, elevated ALT concentrations have been associated with age (9), obesity (9-11) and waist circumference (11). Similarly, IR reflected by quantitative insulin sensitivity index, HOMA-IR or the euglycemic insulin clamp technique, has been independently associated with NAFLD (9, 11, 12).

**Approximately 50-60% of women with PCOS have visceral obesity regardless of BMI** (13). Previous studies by our team noted increased visceral adiposity among Chinese women with PCOS compared to healthy controls, regardless of age and BMI (14, 15). Visceral adiposity can be measured as mesenteric fat thickness using high-resolution real-time ultrasound, which allows good delineation of normal abdominal anatomy including the recognition of normal mesenteric leaves and differentiation of the three types of fat depots (16). Our group previously demonstrated that sonographic measurement of mesenteric fat thickness showed better correlation with cardiovascular risk factors than measurement of



### Dr Noel Y.H. Ng

- PhD, MRes, BSc
- Post Doctoral Fellow
- Division of Endocrinology and Diabetes
- Department of Medicine and Therapeutics
- The Chinese University of Hong Kong

total abdominal and visceral fat by MRI (17). We have also shown that sonographic measurement of mesenteric fat thickness was a powerful predictor of fatty liver in both women with PCOS and healthy Chinese adults (18, 19). In the past few decades, numerous studies have expanded the notion proposed by Vague et al. in 1947 that obesity is a heterogeneous disorder and that the regional distribution of body adiposity plays a pivotal role in the abnormal glucose and lipid metabolism (20).

**The regional distribution of abdominal fat plays a critical role in the pathogenesis of metabolic complications since adipocytes function differently based on their location (21, 22). It is suggested that, compared with subcutaneous fat, visceral fat might have better association with the development of T2DM and dyslipidaemia (22).**

Visceral fat is highly susceptible to the lipolytic effects of catecholamines and are more resistant to the inhibitory effect of insulin on lipolysis (17, 23). These lead to an increased flux of free fatty acids from the adipose tissue into the portal circulation, leading to fat accumulation in the liver and muscle (17). Subsequently, this might cause hyperinsulinemia and glucose intolerance, via the reduction of peripheral glucose uptake (23); and eventually, and the hypersinsulinaemia-stimulated *de novo* lipogenesis in the liver (24). Therefore, **with the presence of visceral obesity and IR, women with PCOS demonstrate a higher prevalence of NAFLD.**

For the management of patients with NAFLD, lifestyle interventions with dietary modifications and daily exercise for weight loss is highly recommended. **A sustained reduction of 5–7% of body weight has resulted in improvement in steatosis and inflammation. However, improvement in fibrosis would require a sustained reduction of more than 10% of body weight** (25). In terms of pharmacotherapy, pioglitazone, vitamin E and liraglutide have shown promising results in patients with NAFLD (26, 27). There are also increasing interest on the potential impact of sodium-glucose cotransporter-2 inhibitors (SGLT2 inhibitors). However, more data specifically in women with PCOS and NAFLD but without diabetes are warranted.

Acknowledgement: NYHN is recipient of a RGC Postdoctoral Fellowship and acknowledges support from the Health and Medical Research Fund (18190741).

**View references on:** <https://www.pcosindia.org/newsletter.php>



# 8th Annual Conference of The PCOS Society, India and 3rd Regional Conference of Asia Pacific Initiative on Reproduction (ASPIRE) in collaboration with Indian Society for Assisted Reproduction (ISAR)



**Dr. Duru Shah**

MD, FRCOG, FCPS, FICS, FICOG, DGO, DFP, FICMCH  
President PCOS Society, India  
Organizing President,  
8th Annual Conference, Bengaluru



**Dr. Madhuri Patil**

MD, DFP, DGO, FCPS, FICOG (Mumbai)  
Vice President, PCOS Society, India  
Organizing Chairperson  
8th Annual conference, Bengaluru

Dear Friends,

As the President of the PCOS Society of India, I am proud to say that our Annual Conferences, which we have been initiated since 2016, have been regarded as some of the most highly academic and well organized Conferences in Gynaecology in India.

We have had Collaborative Conferences with the **Androgen Excess & PCOS Society (AE-PCOS Society)**, with the **International Society of Gynecological Endocrinology (ISGE)** through the years. The recent Annual Conference in collaboration with **ASPIRE** and the **Indian**

**Society for Assisted Reproduction (ISAR)** and hosted by **Karnataka Chapter of ISAR (KISAR)** which was held in Bengaluru, India in June 2023, was no exception, it was brilliant! We had excellent participation instead discussion and a very positive feedback from our delegates.

**ASPIRE** brought in a lot of expertise and charm from the different countries of the Asia-Pacific Region, which was very well received. Our heartfelt appreciation goes out to all our International and National Speakers for adding an extra star to a 5 Star Conference!

We had 6 Pre-congress Workshops which were

well attended. The 2 hands-on Workshops on **“Pre-implantation Genetic Testing”** and **“Cryopreservation of Oocytes and Embryos”** were the highlights- along with the Workshop on **“Errors in ART”**. There were 3 more Workshops on PCOS, namely, **“Insulin resistance in PCOS”**, **“Ultrasound in PCOS”** and **“Body image in PCOS”**. The Workshop on **“Ultrasound in PCOS”** had a live demonstration of Ultrasound in women with PCOS.

The Workshops were followed by a 2-day Conference which had 4 keynote addresses, 2 Orations and many Symposia with plenty of practical discussions and take-home messages.



Executive Committee of PCOS Society with Chief Guest Ms. Shaline Rajneesh & Guests of Honor: Prof Clare Boothroyd and Dr. Nandita Palshetkar



Evening entertainment with our members.



Evening entertainment with our members.



Dr Duru Shah with ASPIRE Board members in the Evening function.



**Dr. Clare Boothroyd being presented with the KISAR Dr. Gunasheela Memorial Oration Award for her oration on Unexplained Infertility - "A vanishing entity in 2023".**



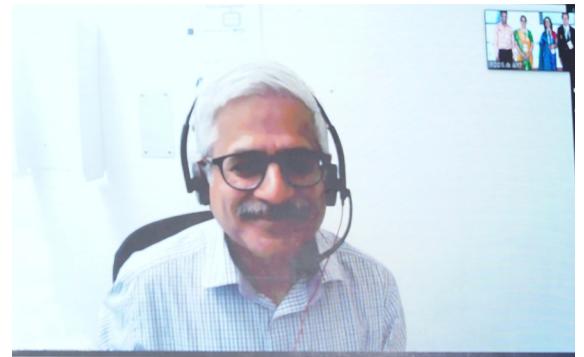
**Prof Duru Shah being presented with an award for her Oration on "PCOS across generations ..... can we bring it to a halt?"**



**Dr. Madhuri Patil: Keynote address on "Gut Dysbiosis in PCOS".**



**Prof Virgilio Novero-"Keynote Address on Paternal factors and reproductive outcome".**



**Prof Kamal Ojha (on the screen): "Does 3D USG and doppler of endometrium predict implantation?"**



**Dr. Nandita Palshetkar-Oration on Anastasis of the Sleeping Beauty Illuminating the beginning of life.**



**Prof Chii-Ruey Tzeng- "Keynote address on How to optimize ART success rate in difficult cases".**



**Dr Angela Aguilar- "Endometrial Hyperplasia"**



**Prof. Nares Sukcharoen: How should we assess OHSS by ultrasound, what are the high risk markers?**



**Prof. Tin Chiu Li (On the screen)-Keynote Address on "The good, fast and cheap - does it ever exist?"**

## Winners of the Oral Presentations at the 8th Annual Conference

### 1st Prize Winner Dr. Morsheen Md.Shahed

Short-term and low-dose liraglutide plus metformin decreased body mass index and insulin resistance more than metformin alone in obese women with polycystic ovarian syndrome: an open-label randomized controlled study



### 2nd Prize Winner Dr. Abid Hussain Bhat

Hypermethylation and downregulation of Vitamin D receptor (vdr) in polycystic ovary syndrome (PCOS).



## Consensus Statement on the Use of Oral Contraceptive Pills in Polycystic Ovarian Syndrome Women in India. By Duru Shah et al



**Dr Nagadeepti Naik**  
DNB(OBGYN), Fellowship in  
Reproductive Medicine (ICOG).  
Senior Consultant,  
Indira IVF, Vashi

The National PCOS Working group of India published a consensus statements on the use of oral contraceptives in PCOS women. Apart from their contraceptive effects, OCPs are the first line treatment in PCOS women for regulating the menstrual cycles, treating symptoms of hyperandrogenemia like acne, hirsutism and also in protecting the endometrium against unopposed effects of estrogen.

Estrogen present in the OCPs increases SHBG levels, thus decreasing the free circulating androgens. The progestin component of OCP suppresses the secretion of LH, whilst also reducing the adrenal production of androgens. Low dose COCPs containing neutral or antiandrogenic progestins may be the OCP of choice in the treatment of PCOS. The side effects of OCPs include weight gain, mood changes, and effects on cardiometabolic risk factors which may at times exacerbate the problems in PCOS women. Therefore, before initiating treatment with OCPs, thorough counseling explaining the safety and benefits and interaction with other drugs is essential, and this should be followed by monitoring at every visit.



The Indian phenotype of PCOS is at high risk for metabolic syndrome and insulin resistance. The current evidence suggests that the benefits outweigh the risks for its use in most PCOS women and the treatment needs to be individualized.

**Reference:** J Hum Reprod Sci. 2018 Apr-Jun; 11(2):96-118. doi: 10.4103/jhrs.JHRS\_72\_18

**View the entire consensus statement:** <https://www.pcosindia.org/publication.php>

## Points of View



**Dr Madhuri Patil**  
M.D., DGO, FCPS, DFP, FICOG.  
Dr. Patil's Fertility & Endoscopy Clinic  
Bangalore



**Dr.Aabha Nagral**  
Consultant Hepatologist and  
Liver transplant Physician,  
Jaslok Hospital Mumbai and  
Apollo Hospital, Navi Mumbai



**Dr. Samridhi Poyekar**  
DNB Medicine and DM  
Gastroenterology  
Asst. Professor, Dept.  
of Gastroenterology,  
KEM Hospital, Mumbai

### What is Gut Dysbiosis, why is it called the leaky Gut?

The gastrointestinal (GI) tract is home to trillions of microorganisms, including bacteria, fungi, and viruses. This intestinal microbiota forms a symbiotic relationship with the host and maintains the energy balance and has functions in nutrition, immune regulation, metabolism, elimination of specific toxins, and defence against pathogens. Dysbiosis refers to an imbalance of microbial species and a reduction in microbial diversity. As a result, beneficial bacteria are usually minimized, whereas other bacteria that may be harmful increase in number.

Gut dysbiosis may influence local and systemic processes, with impaired gut barrier function. Disruption of the epithelial barrier increases intestinal permeability, resulting in leaky gut syndrome. It may also affect nutrient transformation, vitamin supply, immunity with immune-mediated inflammation, gut-to-brain communication, and even tumour progression. Diseases can cause changes in intestinal microbiota, affecting its structure, relative abundance, and diversity.

**Alterations in intestinal microbiota may expose to a higher risk to develop diseases, including metabolic diseases, polycystic ovary syndrome (PCOS), type 2 diabetes mellitus (T2DM), and obesity apart from inflammatory bowel syndrome and colorectal cancer.** It has also been observed that insulin resistance, chronic inflammation, obesity, and mitochondrial dysfunction increase the incidence of obesity, cardiovascular disease, obstructive apnoea syndrome, and other complications.

### How is PCOS connected to the leaky Gut?

In patients with PCOS, Gut dysbiosis may result from consumption of high fat, high carbohydrate, low fibre diet and deleterious effects of obesity on the gut microbiome. Alteration in the level of Firmicutes, Lactobacillus, Bifidobacterium, Bacteroidetes in the gut can contribute to PCOS in the following way:

**1)** Disruption of the gut epithelial barrier function resulting in endotoxemia associated chronic low-grade inflammation which contributes to insulin resistance seen in PCOS.

**2)** Alteration of lipid and bile acid metabolism by stimulating the Sterol regulatory element binding protein (SREBPs) and decreasing the activity of Cholesterol 7 hydroxylase (CYP7A1) respectively, inducing hepatic lipogenesis and dyslipidemia.

**3)** Reduced short chain fatty acid synthesis which modifies glucose and lipid metabolism via PPAR  $\gamma$  pathway, resulting in insulin resistance.

**4)** Abnormal secretion of gut derived hormones like GLP 1 implicated in glucose metabolism, insulin sensitivity, gastric emptying and regulation of appetite. This may aggravate insulin resistance and obesity.

Hyperandrogenism implicated in PCOS also causes gut dysbiosis as is also seen in patients treated with letrozole thereby resulting in the metabolic derangement seen with dysbiosis.

Restoring the normal diversity of gut microbiome has become a new therapeutic target in the treatment of PCOS.

## How is PCOS connected to the GUT?



**Dr Prasanna S Shah**  
MD, DNB  
Consultant Gastroenterologist  
Breach Candy Hospital, Mumbai

### How do we diagnose Gut dysbiosis?

There are multiple tests which can be done to diagnose dysbiosis.

1. There are clinical symptoms and
2. There are tests to diagnose Gut dysbiosis-
  - 1. 1. Urine Test:** This method by urine analysis looks for unique products of microbial metabolism. Urine can indicate presence of small bowel yeast, bacterial overgrowth, and unfriendly intestinal microorganisms that cause high quantities of compounds which are not normally produced by human cells, such as D-arabinitol. These are absorbed into the blood from the intestines which eventually appear in the urine. The advantage of urine testing is that it is very easy to do. [Not available]
  - 2. Intestinal Permeability Assessment or Mannitol-Lactulose**

*Continued on page 10*



**Dr Amit Maydeo**  
MS, FASGE, FJGES  
Consultant Gastroenterologist  
Breach Candy Hospital, Mumbai

### How do we treat Gut Dysbiosis?

Treatment aims to restore the gut microbiota, such as dietary interventions, probiotics, and Fecal Microbiota Transplantation (FMT)

A micronutrient dense, high fiber diet with sufficient water intake and high-quality protein, along with avoidance of Western dietary components like saturated trans-fat, simple sugar, refined flour, high fructose corn syrup, and other processed foods, confers a protective effect regarding intestinal dysbiosis.

Probiotic micro-organisms are naturally found in fermented foods such as yoghurt, kefir, pickles, turnip, soy products, olives, bacon meat products etc. Prebiotics such as leeks, asparagus, garlic, onions, wheat, oats, bananas.

*Continued on page 11*

## Events Held

### Updates: Challenges, Consequences and Control of PCOS

16th April, 2023 | 11.00 am - 1.00 pm

**Hybrid Event**



**Dr. Piya Ballani Thakkar**  
Endocrinologist - Bombay Hospital, Mumbai  
MD, DNB, DGO, FCPS  
**Moderator**



**Dr. Sandhya Saharan**  
Consulting Obstetrician & Gynaecologist - Jupiter Hospital, Mumbai  
MD  
**Moderator**



**Dr. Duru Shah**  
Founder President - The PCOS Society (India)  
MD, FRCOG (Lon.), FICOG, FICS, FCPS, FICMCH, DGO, DFP  
**Expert**



**Dr. Shashank Joshi**  
Endocrinologist at Joshi Clinic  
MD, DM, FRCP (Lon, Edin, Glasg), FRCP (USA), FRCE (USA)  
**Expert**



**Dr. Jagmeet Madan**  
National President - Indian Diabetic Association  
MSc, MPhil, PhD (Food and Nutrition)  
**Expert**



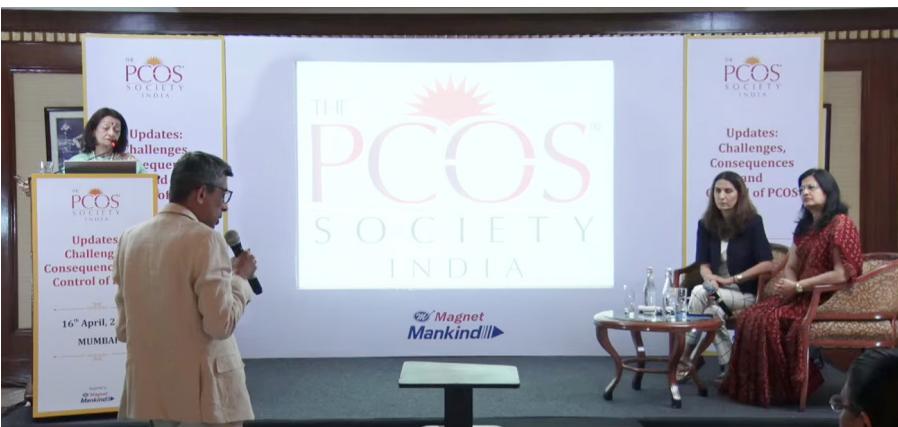
**Dr. Nidhi Shah Gandhi**  
Consultant OBGYN - Jaslok Hospital and Research Centre  
DGO, DNB, IFCCP - IARC (Colposcopy)  
**Co-ordinator**

Supported by 

The PCOS Society of India conducted a CME on “Updates: Challenges, Consequences and Control of PCOS” on the 16th of April 2023 at the ITC, Grand Central, Parel, Mumbai. This CME was a hybrid event which was attended by 2550 delegates.

The convenor for the event was Dr. Nidhi Shah and was moderated by Dr. Priya Thakkar and Dr. Sandhya Saharan. The CME was an academic feast with eminent speakers and stalwarts in their fields taking centre stage. Dr. Duru Shah, Founder president PCOS Society gave us an insight into mother to child transmission of PCOS. Dr. Shashank Joshi, Vice president PCOS Society, highlighted the difference between Indian PCOS and the rest of the world, Dr. Jagmeet Madan, National president, Indian Diabetic Association enlightened us about the role of diet in the development of PCOS and Metabolic Syndrome. Special thanks to the Magnet division of Mankind for the educational grant for this CME.

View recording of the program on:  
<https://www.pcosindia.org/events.php>



Lt to Rt : Drs Duru Shah, Piya Ballani Thakkar, Sandhya Saharan, Shashank Joshi(in the audience)



Dr. Jagmeet Madan  
Is our Diet Responsible for PCOS and Metabolic Syndrome?

## PCOS Science Live Webinar series



**Dr. Duru Shah**  
MD, FRCOG (Lon.), FICOG, FICS, FCPS, FICMCH, DGO, DFP  
Founder President  
The PCOS Society (India), Mumbai  
**Convenor**



**Dr. Sujata Kar**  
MD, DNB, KCHPL, Bhubaneswar  
Practicing Gynaecologic Endoscopy & Assisted Reproduction  
**Moderator**



**PCOS SCIENCE LIVE**  
A WEBINAR SERIES  
11 MARCH 2023, SAT, 6.00 TO 7.30 PM  
**EPISODE EIGHT**  
Dr. Sujata Kar will be in conversation with, Dr. Priyanka Prabhakar  
**Myoinositol - New evidence of Impact on Infertility?**  
**REGISTER**  
[www.pcosindia.org](http://www.pcosindia.org)



**Dr. Priyanka Prabhakar**  
MD, DNB  
Senior Resident (PGIMER, Chandigarh)  
**Expert**



**Dr. Aakriti Gupta**  
MBBS, MD OBGYN, FRM, MRCOG-1 (London)  
Infertility Specialist & IVF Incharge, Shri Mahant Indresh Hospital, Dehradun  
**Coordinator**

Supported by   

To view the PCOS Science Live Sessions visit <https://pcosindia.org/webinars.php>

Continued from page 9 (How do we diagnose Gut dysbiosis?)

**Intestinal Permeability Test:** The patient is given pre-measured amount of two sugars: lactulose and mannitol. The relative presence of these sugars in the urine will show how permeable the intestine is. An elevated ratio of lactulose to mannitol will indicate dysbiosis and leaky gut syndrome. [Not available]

**3. Hydrogen Breath Test:** This is a gold standard for assessing dysbiosis. It is fairly simple in principle; however, this test is cumbersome and not easily available. It also tells us about other digestive disturbances related to sugar or food intolerances. [Available].

- After a baseline breath gas measurement, the patient ingests a standardized solution of lactulose or another substrate that is normally indigestible by humans but highly digestible by bacteria.
- This test is done by measuring hydrogen and methane in the breath are done at regular intervals, typically at every 20 minutes and will indicate the degree of microbial fermentation of the lactulose within the upper GI tract.
- A rapid and steady rise in hydrogen and methane are proof positive of dysbiosis. It is very important to note that dysbiosis cannot be diagnosed or found through an endoscopy or colonoscopy, nor does it show up on standard blood work, and hence many practitioners miss it.

Continued from page 9 (How do we treat Gut Dysbiosis?)

FMT is an emerging method that utilizes the principle of engrafting the microbiota from healthy donors into a recipient via fecal enemas or nasoduodenal tubes or colonoscopy administration, to re-establish a stable environment that influences both the host and endogenous microbes.

**Microbiome sequencing analysis** is used to identify the diverse species of microorganisms within our gut, followed by characterization, analysis, and interpretation of larger patterns within them. The report gives information on disease susceptibility personalized precision guided nutritional recommendation and supplementation information regarding prebiotics and probiotics.

Our gut microbiome is unique, follows certain larger patterns and understanding them provides us with an opportunity to modulate our microbiome towards better health benefits.

## Higher risk of Type 2 Diabetes in women with hyperandrogenic polycystic ovary syndrome



**Dr Zeel Shah**

- MS, DNB
- Fellowship in Reproductive Medicine
- Consultant Obstetrician and Gynaecologist and Fertility Specialist, Mumbai.

This study was conducted with a primary aim to investigate the long-term consequences of obesity, PCOS and type 2 diabetes specially addressing this risk in hyperandrogenic PCOS.



All women with diagnosis of PCOS, androgen excess, or anovulatory infertility born between 1950 and 1999 (n = 52,535) were identified in the Patient Register. The HA PCOS phenotype was defined by two filled prescriptions for anti-androgenic drugs. For each woman with PCOS, five control women (n = 254,624) were randomly chosen from the Total Population Register, matched for age and geographic area.

The cumulative incidence rates of T2D were 1.3%, 4.4%, and 14.2% in controls (non-PCOS women) and women with normoandrogenic (NA) and HA PCOS, respectively.

After adjustment for BMI, women with PCOS had a twofold higher rate of T2D than non-PCOS women. Women with HA PCOS had a higher rate of T2D than those with NA PCOS (adjusted hazard ratio, 3.86 [95% confidence interval, 3.16-4.72]).

Polycystic ovarian syndrome is an independent risk factor for T2D, even after adjustment for BMI. Women with the HA PCOS phenotype face an even higher risk of T2D than those with the NA PCOS phenotype.

**Reference** - Persson S, Elenis E, Turkmen S, Kramer MS, Yong EL, Poromaa IS. Fertil Steril. 2021 Sep;116(3):862-871. doi: 10.1016/j.fertnstert.2021.04.018. Epub 2021 May 28. PMID: 34053678.

**Novel 4<sup>th</sup> Generation Oral Contraceptive range with Metabolic Neutrality & Benefits**

For oral contraception

# Dronis 30

Drospirenone 3 mg + Ethinyl estradiol 30 mcg

**Benefits beyond oral contraceptive**

**21+7 Regimen ensured effective oral contraception in**

- Obese PCOS patients<sup>1</sup>
- Irregular Cycles<sup>2</sup>
- Hirsutism<sup>3</sup>
- Women Seeking Infertility Treatment<sup>4</sup>

For oral contraception

# Dronis 20

Drospirenone 3 mg + Ethinyl estradiol 20 mcg

**Low dose that goes beyond an OC alone**

**24+4 Regimen ensured effective oral contraception in**

- Endometriosis/Dysmenorrhea<sup>7</sup>
- Acne<sup>6</sup>
- Non Obese PCOS patients<sup>5</sup>
- PMS<sup>8</sup> / PMDD<sup>14</sup>

For Oral Contraception  
*1<sup>st</sup> line in 'Single'*

**Novel 4<sup>th</sup> Generation Progestin Only Pill with Metabolic Neutrality & Benefits!**

# Dronis P

Drospirenone 4mg Tablets

**Benefits beyond Estrogen Free Contraceptive**

**24+4 Regimen offered effective Estrogen Free Contraception, Favourable Bleeding Pattern, Favourable CV safety and 24 Hrs wider missed pill intake window in<sup>9,10,11</sup>**

- Postpartum (Breastfeeding & Non Breastfeeding)<sup>12,13</sup>
- Women with CV risk Factor (Hypertension, Dyslipidemia) & Smokers<sup>12,13</sup>

For the use only of a Registered Medical Practitioner or a Hospital or a Laboratory.

In Pain, Inflammation and Swelling



## CHYMORAL FORTE

Trypsin:Chymotrypsin (6:1) 1,00,000 A.U.

Promotes Healing, Reduces Pain

## Chymoral-AP

Trypsin : Chymotrypsin (6:1) 50000 A.U + Aceclofenac 100mg + Paracetamol 325mg

Accelerates Pain Relief

## ChymoralPlus

Diclofenac K 50mg + Trypsin : Chymotrypsin (6:1) 50000 A.U.

Pain reliever with healing touch

In Pre-conception,  
Pregnancy & Lactation

## SHELICAL<sup>®</sup> XT

Calcium carbonate 1250 mg, Vitamin D<sub>3</sub> 2000 IU, Methylcobalamin 1500 mcg, L-Methyl folate 1000 mcg, Pyridoxal 5 Phosphate 20 mg Tablets

Improves pregnancy outcome

## SHELICAL<sup>®</sup> HD

Elemental Calcium 500 mg + Vitamin D<sub>3</sub> 500 IU Tablets

Strengthens bone and muscle health

## SHELICAL<sup>®</sup> 500

Elemental Calcium 500 mg + Vitamin D<sub>3</sub> 250 IU Tablets

Strengthens bone and muscle health



STRENGTHENING EVERY STAGE OF LIFE SHELICAL

INDIA'S MOST TRUSTED AND AVAILABLE CALCIUM



In PCOS\*

# NORMOZ

Myo-inositol, D-Chiro-inositol, Chromium and Vitamin D tablets

Right Ratio (40:1) for Quicker Action in PCOS

MI and DCI supplementation, in a Physiological ratio (40:1), ensures better clinical results both at ovarian and non ovarian level<sup>1</sup>

Better reduction of insulin resistance, androgens levels & cardiovascular risk<sup>1</sup>

Better restoration of spontaneous ovulation and menstrual cycle<sup>1</sup>

Better results in terms of weight reduction, resumption of spontaneous ovulation and spontaneous pregnancy<sup>1</sup>

Also available

In Obese PCOS\*

## NORMOZ DS

Myo-inositol, D-Chiro-inositol, Chromium and Vitamin D tablets

Double Strength for Effective Action in Obese PCOS

In infertility related to PCOS\*

## NORMOZ PLUS

Inositol 2 gm, N-Acetyl cysteine 600 mg, Folic Acid 50 mcg

Alleviates Hyperandrogenism... Restores Fertility



1. The New Indian Journal of OBGYN. 2019 (January-June); 5(2)

\*As a nutritional supplement